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two Maps and numerous Illustrations. New York: Harper & Brothers. 1876. 12mo, pp. 645.

Sexual, Individual, and Geographical Variation in *Leucosticte tephrocotis*. Geographical Variation among North American Mammals, especially in Respect to Size. By J. A. Allen. (Extracted from Bulletin of the Geological and Geographical Survey of the Territories, vol. ii., No. 4.) Washington, July 1, 1876. 8vo, pp. 30.

Notes on the Geology of Northeastern New Mexico. By O. St. John. (Extracted from the Bulletin of the Geological and Geographical Survey of the Territories, vol. ii., No. 4.) Washington, July 1, 1876. 8vo, pp. 280–308.

Archivos do Museu Nacional do Rio de Janeiro. Vol. i., 1 Trimestre. Rio de Janeiro. 1876. 4to, pp. 30.

The Oaks of the United States. By Dr. G. Engelmann. (From the Transactions of the Academy of Science of St. Louis, vol. iii.) St. Louis, Mo. 1876. 8vo, pp. 20.

Notes on Agave. By Geo. Engelmann, M. D. (From the Transactions of the Academy of Science, of St Louis, vol. iii.) St. Louis, Mo. 1875. 8vo, pp. 35.

The Forest. Products of Michigan at the Centennial Exposition. By Prof. W. J. Beal. Lansing, Mich. 8vo, pp. 16.

Micro-Photographs in Histology, Normal and Pathological. By Carl Seiler, M. D., in conjunction with J. Gibbons Hunt, M. D., and J. G. Richardson, M. D. Vol. i., Nos. 1, 2. Philadelphia: J. H. Coates & Co. 4to, 8 Plates.

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GENERAL NOTES.

BOTANY.[1]

SCHŒNOLIRION; APPENDIX. — About the time when my little article on *Schœnolirion*, for our July number, was issued, a valued Californian correspondent, Mrs. R. M. Austin, rediscovered the doubtful species referred to, namely, *S. album* of Durand, and sent me specimens which have just come to hand. Pratten's specimen, the only one before known, consisted merely of the top of a scape, with the raceme. I have not seen it, and it is probably in Durand's herbarium, at the *Jardin des Plantes*, Paris. But Dr. Torrey s remarks leave no doubt as to the identification, and the specimens (now complete, except as to the fruit,) justify his reference of the plant to his genus *Schœnolirion.* Nevertheless it differs somewhat from the Atlantic species in the particulars mentioned by Dr. Torrey, and especially in the texture of the dried perianth, which is scarious, in the manner of *Allium.* Moreover, only its outer divisions answer to the description as to the three "almost confluent nerves," the three inner divisions being strictly one-nerved. Besides, the ovary is short-stipitate. The ovules in this and the original species of Michaux are geminate and ascending, not "horizontal." The diagnosis of this fourth species may accordingly be expressed as follows: —

S. ALBUM Durand. Leaves rather flaccid; flowers very numerous in a virgate raceme: pedicels horizontal, shorter than the bracts or the perianth: the latter bright, white, scarious when dry; the divisions nerveless, except the midrib, which is triple in the three outer, but simple in the inner: filaments subulate, decidedly perigynous: ovary short-stipitate. California, in Nevada County, *Mr. Pratten;* Plumas County, *Mrs. R. M. Austin.*

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[1] Conducted by PROF. G. L. GOODALE.

It may now be added that the character "rhizomate bulboso-tuberosa," by Dr. Torrey, is by no means correct, and the "root a tuberous rhizoma," of Dr. Chapman, is still less applicable to any species except *S. Elliottii*, and not perhaps properly to that. *S. croceum* and *S. Texanum* have a small but distinct tunicated bulb, the coats fleshy and not numerous, and from the base of this apparently a fusiform root proceeds. *S. album* shows a similar bulb, from the corner of which beneath springs a cluster of rootlets. Our specimens of *S. Elliottii*, all from Dr. Chapman, are indeed destitute of bulb, and show something like a rhizoma. Good specimens showing the underground growth of all these plants are now much wanted.

S. Elliottii not rarely branches its raceme into a panicle. This genus, therefore, presents two difficulties in the way of Mr. Baker's new arrangement of the Liliaceous tribes. It seems to me not remotely related to *Nolina*; but the pedicels are always solitary. — A. GRAY.

SEDUM REFLEXUM L. — This Old World *Sedum*, which is occasionally met with in old-fashioned gardens, has established itself at Pigeon Cove, Essex County, Mass., as we learn from Mrs. Alonzo Wheeler, who has sent living specimens. It occupies an old stone-heap, in a patch a yard or two in diameter, where "Mrs. Sarah Ann Colburn says she noticed it when she was a very little girl, at least sixty years ago," and whence she transplanted some of it to the cemetery at Folly Cove, thirteen years ago. As the station of the plant is only a few rods distant from the ancient dwelling known as "the Garrison House" (a view of which in a wood-cut adorns the twenty-first page of Mr. Leonard's Pigeon Cove and Vicinity), we cannot doubt that it is an escape from gardens, although the species is not handsome enough to reward cultivation, The plants still carry some marks of former cultivation: first, in the augmentation of the normal number of parts in the blossom. Instead of five in the calyx and corolla, or even six, which is not rare in the wild plant in Europe, there are mostly from seven to nine or ten, so that the plant assumes the technical character of *Sempervivum*. Secondly, these flowers are apt to run together into a sort of crest, and to make a somewhat fasciated inflorescence, or a dense cluster, from which, later, pedicels spring in a proliferous manner. We do not wonder that Mrs. Wheeler was puzzled with it. Still she divined that it was some vagarious *Sedum*, not in the ordinary books. — A. GRAY.

A NEW FIR OF THE ROCKY MOUNTAINS. — While collecting in the Wasatch Mountains, in Eastern Utah, last summer, for Major Powell's Survey of the Colorado, I obtained five species of fir, two of which possess a special interest, growing out of the confusion which has heretofore existed respecting the group to which they belong, and the fact that one of them bids fair to be established as a new species. The other turns out to be *Abies concolor* Eng., and not *A. grandis* Lindl., as was supposed, and under which name this tree has been several times reported.

The leaves of my specimens are not glaucous above, but underneath only or not at all, this character not being a constant one. This tree is there known to the Mormon lumbermen as "black balsam" and makes an excellent quality of lumber. It is rarely found above 8500 feet altitude, or below 7000 feet.

But there was another tree there, very much resembling this in its botanical characters, though differing widely in other respects, which I well knew to be a different thing, and as it answered to no description I could find, I became deeply interested in it. In altitude it commences just where the other leaves off, and continues on up nearly to the timber line, or over 11,000 feet altitude. I found it both in the basin of the Sevier River, above Gunnison, and also far to the eastward across the divide on the Colorado side, high up on the slopes of Aquarius Plateau and Thousand Lake Mountain. This tree is distinguished by the lumbermen of that region as "white balsam." It is also known as "pumpkin pine," the wood being rather spongy and poor for lumber. But otherwise it is a much finer tree than *A. concolor,* being very tall and straight, with few limbs from its lower trunk. Of both species I brought back specimens, not only of the leaves, cones, etc., but also sections of the trunk for exhibition at the Centennial, where they may now be seen in Dr. Vasey's excellent collection sent from the Department of Agriculture. I also sent specimens to Dr. Engelmann for identification, from whose report, as follows, it appears that both the species above mentioned have been heretofore confounded under the name of *A. grandis* Lindl., inapplicable to either.

"*Abies subalpina* is the provisional name Dr. Engelmann gives to that fir which occupies the highest wooded regions up to the limits of vegetation in the Rocky Mountains, from Colorado northward and westward to Oregon. In lower altitudes it is replaced in Colorado and Utah by *A. concolor*, and in Oregon by *A. grandis.* All the specimens sent from Colorado by Parry, Hall, and others belong here; but in Oregon collections it is mixed with *A. grandis*, and in both regions has been designated by this latter name. Its nearest affinity is not to any western *Abies*, but to the eastern *A. balsamea*, of which it may prove a geographical variety. Its leaves are shorter than those of *A. grandis*, those of the lower sterile branches are slightly emarginate, on the upper side grooved and without stomata. The leaves of vigorous shoots and of cone-bearing branchlets are acute, above convex and provided with stomata. The cones are purplish brown, the scales scarcely wider than long; the bracts are variable in this as in most other species, and not of much diagnostic value. Mr. A. Murray has, in an Oregon specimen collected by Dr. Lyall, noticed this difference of leaves of sterile and fertile branches, and therefore named it *A. bifolia;* this, however, is a misnomer, indicating something very different from what he intended, and cannot stand.

"In a paper shortly to be published in the Transactions of the St. Louis

Academy of Science, Dr. Engelmann has gone more extensively into the different questions relating to the North American species of Abies."

Until this very needful revision appears, the following characters, drawn from my own specimens, may serve to designate more particularly our welcome newcomer from the mountains.

Abies subalpina Eng., n. sp. Tall and slim, 80 to 100 feet high, often 50 feet without branches; bark smooth, white, and covered with vesicles to near the base; leaves 6 to 12 lines long, less than a line broad, not twisted near the base, bisulcate and somewhat glaucous on the lower (outer) side, short-pointed, obtuse or slightly emarginate, those on the lower branches 2-ranked and spreading, those on the upper scattered, crowded, and more or less appressed, shorter on fertile than on sterile branchlets; cones 2½ to 3 inches long, 1½ to 2 inches thick, solitary, erect, ovate or oblong, obtuse, greenish; scales 6 to 10 lines long and about as broad, horizontal and close-pressed, broad-cuneate, unguiculate, the rounded upper margin somewhat reflexed and resinous, pubescent; bracts short, white with a dark base, erose-dentate all round, their slightly elevated summits furnished with a strong mucro; seeds large, the wing covering nearly the whole surface of the scale; sterile aments 2 inches long, 3 lines in diameter, marked longitudinally and somewhat spirally by the dark centres of the otherwise light brown mucronate scales. — LESTER F. WARD.

BOTANICAL PAPERS IN RECENT PERIODICALS. — *Flora*, Nos. 16 and 17. J. Sachs, On Emulsion Figures, and Clustering of Swarm Spores in Water (continued in No. 17, and not yet finished). A. de Krempelhuber, Brazilian Lichens. Worthington Smith, The Resting Spores of Peronospora infestans. No other journals have come to hand at this date.

ZOÖLOGY.

HABITS OF THE WHITE-FOOTED MOUSE. — The white footed mouse (*Mus leucopus*) sometimes takes up its abode in deserted bird's-nests Audubon, in his work on the Quadrupeds of North America, speaks of this peculiar habit. He says it has been known to take possession of deserted bird's-nests, such as those of the cat-bird, red-winged starling, song-thrush, and red-eyed flycatcher. One day toward the end of August, 1875, I found one of these mice in the deserted nest of a red-eyed flycatcher (*Vireo olivaceus*); it was on the border of a thick forest in the Blueridge Mountains, Monroe County, Pa. The nest was situated near the extremity of one of the limbs of a sapling or young tree, a few feet from the ground. The mouse had completely stopped up the inside of the nest with dried grass, leaving just enough room to squeeze itself through, and have a comfortable bed at the bottom. It was inside of the nest when I found it, but afterwards escaped. When I first observed this peculiar structure I could not make out what it was; but on thrusting my finger through the dried grass, I discovered the strange tenant.